

Application Serial No.: 10/663,759
Reply to Office Action dated September 14, 2006

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 4-15, 18-24, 28-39, and 42-48 are presently active in this case, Claims 6-8, 10, 11, 13, 30-32, 37, and 47 having been amended by way of the present Amendment. Claim 1-3, 16, 17, 25-27, 40, and 41 have been canceled without prejudice or disclaimer.

Claims 4, 5, 9, 14, 15, 18-24, 28, 29, 33, 34, 38, 39, and 42-46 have been allowed. Claims 47 and 48 are also in condition for allowance, since they depend from allowable claims.

Claims 10, 13, and 37 were indicated as being allowable if rewritten in independent form. Claims 10, 13, and 37 have been rewritten in independent form including all of the limitations of their respective base claims, and thus Claims 10, 13, and 37 are in condition for allowance.

Claim 11 was objected to for a minor informality. Claim 11 has been amended as suggested in the Official Action and thus this objection has been overcome.

In the outstanding Official Action, Claims 6-8, 30-32, 40, 41, 47/40-41, and 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (U.S. Patent No. 6,621,512) in view of Iwanaga et al. (JP 8-7294). Additionally, Claims 11, 12, 35, and 36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. in view of Fujii et al. (JP 11-86296). For the reasons discussed below, the Applicant requests the withdrawal of the obviousness rejections.

The basic requirements for establishing a *prima facie* case of obviousness as set forth in MPEP 2143 include (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the reference (or references when combined) must teach or suggest all of the claim limitations. The Applicant submits that a *prima facie* case of obviousness cannot be established in the present case because (1) the cited references, either when taken singularly or in combination, do not teach or suggest all of the claim limitations, and/or (2) there is no suggestion or motivation to modify or combine the references to arrive at the present invention.

Claim 6 of the present application recites a light source unit comprising, among other features, a supporting unit formed, as one set, consisting of first and second holding faces aligned approximately in parallel to an optical axis of a first coupling lens for holding the first coupling lens, and at least two sets of the supporting unit are formed integrally as one component, each set of the at least two sets having a respective elastically pressing member pressing a side portion of a respective coupling lens of a plurality of coupling lenses. Claim 30 recites similar features. Claim 7 recites a light source unit comprising, among other features, a supporting unit that is formed, as one set, consisting of the first and second holding faces aligned approximately in parallel to the optical axis of the first coupling lens for holding the first coupling lens, and at least two sets of the supporting unit are arranged such that a direction of the at least two sets, in terms of a direction of the optical axis, a primary scanning direction and a secondary scanning direction, is identical to each other,

each set of the at least two sets having a respective elastically pressing member pressing a side portion of a respective coupling lens of the plurality of coupling lenses. Claim 31 recites similar features. And, Claim 8 recites a light source unit comprising, among other features, a supporting unit that is formed, as one set, consisting of the first and second holding faces aligned approximately in parallel to the optical axis of the first coupling lens for holding the first coupling lens, and at least two sets of the supporting unit are arranged such that a direction of the at least two sets, in terms of a direction of the optical axis, a primary scanning direction and a secondary scanning direction, is symmetrical to each other, each set of the at least two sets having a respective elastically pressing member pressing a side portion of a respective coupling lens of the plurality of coupling lenses. Claim 32 recites similar features.

The Official Action cites the Nakajima et al. reference for the teaching of a multi-beam scanning apparatus, for example as depicted in Figure 9 thereof, including coupling lenses (104, 115) and a projecting portion (112) having recesses (115, 116) for receiving the coupling lenses. The Applicant notes that with respect to the discussion of obviousness rejection of Claims 11, 12, 35, and 36, that the Official Action acknowledges that the Nakajima et al. reference does not disclose a coupling lens holding unit having a first and second holding faces and an elastically pressing member pressing a side portion of a coupling lens against the first and second holding lenses so as to thereby hold the lens, which features are also recited in Claims 6-8, and similarly in Claims 30-32.

In the Nakajima et al. reference, the coupling lenses are attached to the projecting portion using adhesive. To the contrary, the present invention recited in Claims 6-8 (similar recitations in Claims 30-32) have at least two sets of a supporting unit having a respective

elastically pressing member pressing a side portion of a respective coupling lens. The use of an adhesive to attach a coupling lens, as compared to the use of an elastically pressing member, provide very distinct structural hurdles to overcome caused by high operating temperatures of the optical apparatus. One of ordinary skill in the art would not have looked to the Nakajima et al. reference to find solutions to the problems associated with the elastically pressing members of the present invention, since the Nakajima et al. reference utilizes adhesive and therefore does not discuss problems with or solutions to problems associated with the use of an elastically pressing member under such high operating temperatures.

The present invention provides a structure to avoid the displacement of the position of the coupling lens due to the expansion or shrinkage of the elastic member in accordance with the change in temperature of the apparatus. The elastically pressing member should exert a sufficiently large force in order to maintain the coupling lens in the proper position regardless of the temperature of the apparatus. Thus, the coupling lens holding unit, which receives the coupling lens, receives a relatively strong pressing force from the elastically pressing member. If such a force is not maintained, then distortion, shift, or tilt of the components could occur, which could result in severe consequences in this field of technology where very small displacements can cause problems. One of ordinary skill in the art would not have looked to the Nakajima et al. reference, since this reference deals with the use of adhesive to mount the coupling lenses, and thus this reference provides no teaching relevant to the use of elastically pressing members, as used in the present invention.

The Official Action combines the teachings of the Nakajima et al. reference with the

Iwanaga reference. The Iwanaga reference depicts a light source device with a single collimator lens (2) and a lens holder (11). An elastic member (3) is used to abut the lens (2) on the lens holder (11).

As noted above, one of ordinary skill in the art would not have combined the teachings of the Nakajima et al. reference and the Iwanaga reference, since the structures described in each reference present distinctly different problems. Additionally, the Iwanaga reference does not disclose plural elastically pressing members used with at least two set of a supporting unit. The Iwanaga reference merely depicts a single collimator lens and lens holder, and does not disclose or suggest any additional lens holder or the problems that are associated with providing such an additional lens and lens holder on a supporting unit.

Accordingly, the Applicant submits that a *prima facie* case of obviousness cannot be established with respect to Claims 6-8 and 30-32 because the Nakajima et al. and Iwanaga references, either when taken singularly or in combination, do not teach or suggest all of the claim limitations, and there is no suggestion or motivation to combine the references to arrive at the present invention. Thus, the Applicant respectfully requests the withdrawal of the obviousness rejections thereof.

Regarding the obviousness rejections of Claims 11 and 35, Claim 11 recites a light source unit comprising, among other features, an elastically pressing member pressing a side portion of the first coupling lens against the first and the second holding faces so as to thereby hold the first coupling lens, wherein the elastically pressing member is formed of planar elastic material, and wherein ends of the elastically pressing member are fixed so as to hold in between the portion of the first coupling lens in contact with the holding faces, and

Claim 35 recites similar features.

The Official Action acknowledges that the Nakajima et al. reference does not disclose a coupling lens holding unit having a first and second holding faces and an elastically pressing member pressing a side portion of a coupling lens against the first and second holding faces so as to thereby hold the lens, where the elastically pressing member is formed of a planar elastic material and whose ends are fixed approximately symmetric with respect to the coupling lens. Furthermore, it is noted that the Nakajima et al. reference also does not disclose ends of the elastically pressing member that are fixed so as to hold in between the portion of the first coupling lens in contact with the holding faces, as recited in Claim 11, and similarly in Claim 35.

The Official Action cites the Fujii et al. reference for the teaching of the deficiencies noted above with respect to the Nakajima et al. reference. The Fujii et al. reference is cited for the teaching of the fixed piece (24) depicted in Figures 8 and 9 thereof. However, the Applicant notes that the fixed piece (24) does not press a side portion of a coupling lens against first and second holding faces, as recited. Furthermore, the Applicant notes that the fixed piece (24) does not hold the portion of the coupling lens in contact with the holding faces, as recited. In the Fujii et al. reference, the fixed piece (24) presses against an outer surface of a lens frame (10), and the outer surface of the lens frame (10) presses against and is in contact with the supporting body (12). However, in the Fujii et al. reference, the lens (11) is not pressed against and in contact with the supporting body (12). Thus, both references, either when taken singularly or in combination, fail to disclose all of the limitations recited in Claims 11 and 35.

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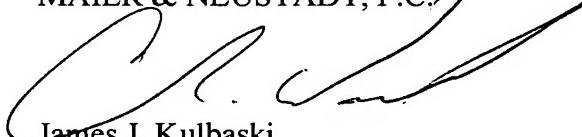
Accordingly, the Applicant submits that a *prima facie* case of obviousness cannot be established with respect to Claims 11 and 35, and thus, the Applicant respectfully requests the withdrawal of the obviousness rejections thereof.

The dependent claims are considered allowable for the reasons advanced for the independent claim from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed nor suggested by the applied references when those features are considered within the context of their respective independent claim.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



James J. Kulbaski
Registration No. 34,648
Attorney of Record

Christopher D. Ward
Registration No. 41,367

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/01)

JJK:CDW:brf
I:\atty\cdw\24xxxx\242554US3\am3.doc